CLAIMS

1. A data sending device for generating and outputting a sending signal based on biphase-mark-encoded sending data, the data sending device comprising:

a biphase decoding section for biphase-mark-decoding the sending data; and

a sending section for generating and outputting the sending signal based on output data from the biphase decoding section.

2. A data sending device according to claim 1, wherein the sending section includes a mapping section for mapping each symbol of the output data from the biphase decoding section to any one of a plurality of signal levels, and generates the sending signal based on output data from the mapping section.

3. A data sending device according to claim 2, wherein the mapping section performs mapping such that a higher/lower relationship of the signal level of each symbol with respect to a reference level is constantly inverted on a symbol by symbol basis.

4. A data sending device according to claim 3, wherein:

the sending data includes a data section to which biphase mark encoding is applied, and a non-data section to which the biphase mark encoding is not applied;

the biphase decoding section detects the non-data section; and

when the biphase decoding section detects the non-data section, the mapping section maps the non-data section using a mapping table which is different from a mapping table used for the data section.

5. A vehicle-mounted apparatus, having a biphase mark encoding function and includes a data sending device according to claim 1.

6. A data receiving device for generating and outputting receiving data based on a receiving signal, the data receiving device comprising:

a receiving section for receiving the receiving signal; and

a biphase encoding section for generating the receiving data by biphase-mark-encoding output data from the receiving section and outputting the receiving data.

7. A data receiving device according to claim 6, wherein the receiving section includes a determination section for outputting data in accordance with a signal level of each symbol of the receiving signal.

8. A data receiving device according to claim 6 or 7, wherein:

the receiving signal includes a data section and a non-data section;

the receiving section detects the non-data section; and

when the receiving section detects the non-data section, the biphase encoding section converts the non-data section into a predetermined bit stream using a conversion table.

9. A data receiving device according to claim 6, wherein the receiving section generates the output data based on a clock signal recovered from the receiving signal.

10. A vehicle-mounted apparatus, having a biphase mark decoding function and includes a data receiving device according to claim 6.

11. A data transmission method for transmitting biphase-mark-encoded sending data, wherein:

the sending data is biphase-mark-decoded and then sent on a sending side; and

the sending data is reproduced by biphase-mark-encoding receiving data on a receiving side.